

A NEW SPECIES OF *SISYRA* BURMEISTER (NEUROPTERA: SISYRIDAE) FROM THE PAROO RIVER, NORTHWESTERN NEW SOUTH WALES

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Abstract

Sisyra potamophila sp.n. is described from the Paroo River, Nocolche Nature Reserve, New South Wales. A key to the eight known species of Australian Sisyridae is included.

Introduction

Members of the neuropteran family Sisyridae (spongillaflyies) are uncommon insects in Australia. Eight species are now known from the continent, most of them from few localities. Adults are usually taken by beating, sweeping, at light or in Malaise traps adjacent to freshwater dams, lakes or streams. Larvae are aquatic and feed on freshwater sponges.

New (1996) provided a catalogue of the six previously known Australian species: *Sisyra tropica* Smithers (Daintree, Lake Placid, Gordonvale and Mulgrave River, all in the Cairns region of NE Queensland), *Sisyra brunnea* Banks (Claudie River, Kuranda, Gordonvale, Mulgrave River, Cedar Creek and Brisbane, Qld), *S. punctata* Banks (Burnside Station, Northern Territory; Rocky River and Bundaberg, Qld), *S. turneri* Tillyard (Armidale, New South Wales), *S. rufistigma* Tillyard (Coutts Crossing, Orara River, Apsley Falls and Royal National Park, NSW) and *S. esbenpeterseni* Handschin ('Northern Australia' and Jim Jim Waterhole, Northern Territory). The two additional species are *Sisyra potamophila* sp. n. from the Paroo River, Nocolche Nature Reserve, NSW and an undescribed species of *Sisyra* Burmeister from Lake Pedder, Tasmania, which will be described elsewhere.

Esben-Petersen (1918) considered *S. rufistigma* to be a synonym of *S. brunnea*, a conclusion accepted by Handschin (1935) when he described *S. esbenpeterseni*. Smithers (1973) took a more cautious approach, preferring to await more information on the morphology (especially that of the male genitalia) of the two species before making a decision on their synonymy.

Sisyra potamophila sp. n.

(Figs 1-4)

Types. Holotype ♂, NEW SOUTH WALES: light trap, Paroo River, Nocolche Nature Reserve (29.84833S, 144.13512E), 1.iv.2005, G. Theischinger. *Paratypes:* 1 ♂, 3 ♀♀, same data as holotype, G. Theischinger. Holotype and paratypes in the Australian Museum, Sydney.

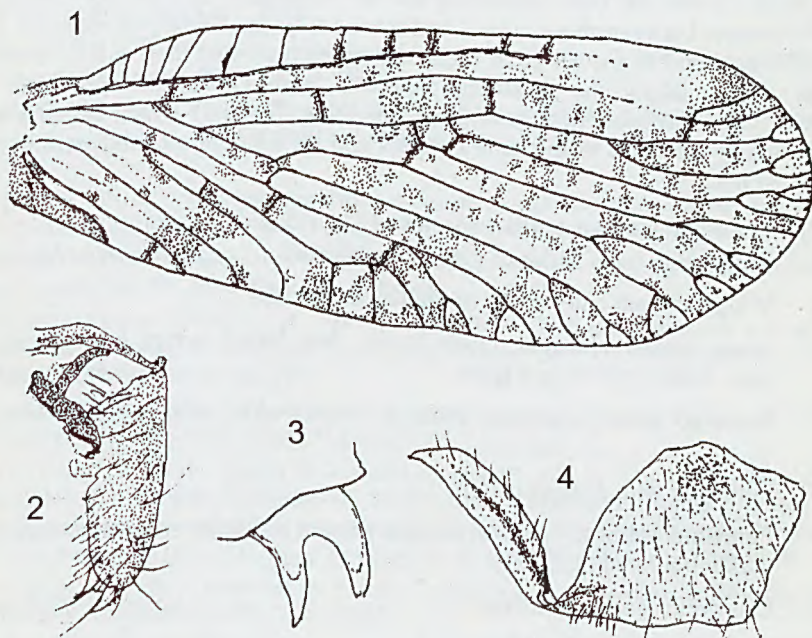
Description. Male. Colouration (in alcohol): Vertex shiny brown, darker in occipital region, especially in middle. Head behind eyes laterally dark brown. Epicranial suture darker, almost black. Frons brown. Clypeus and labrum pale. Scape and pedicel as vertex, flagellum paler, of uniform colour

throughout. Eyes black. Maxillary palps pale, distal segment brown. Pronotum shiny, a little darker than vertex. Meso- and metanotum shiny, colour as pronotum, with darker median suture, paler on each side of suture, especially posteriorly. Scutellum brown with darker spot adjacent to end of median mesonotal suture. Pleural sclerites of meso- and metathorax dark brown, a pale area just below wing bases and another just dorsal to base of coxae. Legs pale except for brown coxae of meso- and metathoracic legs. Forewings (Fig. 1) hyaline with variable, irregular pattern of small brown patches and spots. Costal cross veins in distal part of costal cell bordered with brown as are other cross veins, except those in basal part of costal cell. Much of pterostigma and a small area of wing immediately posterior to it hyaline, forming a transparent 'window' in which veins are poorly developed and dark pigment absent, the pterostigmal limits therefore not distinct. Abdomen pale, ventrally with a row of distinct, narrow, transverse, sclerotised dark brown bands adjacent to either side of intersegmental areas. Entoprocessus (claspers) (Fig. 2) conspicuously dark brown in contrast to otherwise pale abdomen.

Morphology: Length of body 3.6 mm. Head and dorsal surface of thoracic segments setose, the setae mostly pale and very fine except for a group of dark, more rigid setae between and posterior to bases of the antennae. Median epicranial suture ends about half way between back of vertex and line of insertion of bases of antennae. Forewing length 4.3 mm. Forewing (Fig. 1, setae not shown) main veins with single row of strong setae. Main veins mostly with two distal bifurcations near wing margin. Wing margin with more than one row of setae along anterior margin from wing base to apex, beyond which there is a single row. Trichosors mostly poorly developed. About 14 costal crossveins. Vein Sc evanescent in the indistinctly defined pterostigma. Hind wings with eight costal crossveins basad of pterostigmal area. Subcosta ends in vein R₁. Veins setose. In central area of wing setae are arranged alternately in pairs on the veins so that the setae cross each other. Wing margin strongly setose. Some marginal setae near wing apex also point in different directions and cross one another. Claspers (entoprocessus) (Fig. 2, right clasper illustrated) in the form of well sclerotized, setose, elongate, almost parallel-sided lobes, each terminating in a stout, forked plate (Figs. 2 and 3). In lateral aspect claspers have a straight lower margin and a slightly sinuous upper margin. Parameres (Fig. 2, right paramere associated with right clasper) heavily sclerotised, anteriorly divided, rod-like structures ending posteriorly in a sharp hook. The gonarcus (Fig. 2) is a strongly sclerotised, simple, transverse band lying anterior to the bases of the claspers. The ectoprocts consist of a simple transverse, setose sclerite, medially narrowed, lying anterior to the gonarcus and bearing a group of five or six trichobothria in the broadest area near each end.

Female. Colouration (in alcohol) as for male. Tergite 9 (Fig. 4) conspicuously dark in contrast to pale areas of abdomen. Sternite 9 with dark median band

along its length. General morphology similar to that of male. Larger than male; length of body 4.3 mm. Forewing length 4.4 mm. Ninth tergite and gonapophyses laterales (ninth sternite) as in Fig. 4.



Figs 1-4. *Sisyra potamophila* sp. n. (1), male forewing; (2), male clasper, paramere and gonarcus, right side; (3), posterior end of right clasper (enlarged); (4), female 9th tergite and sternite, right side.

Discussion

Species of *Sisyrina* Banks are easily distinguished from those of *Sisyra* by the presence of a series of outer gradate crossveins in the fore and hind wings in *Sisyrina* (Banks 1939, Parfin and Gurney 1956, Smithers 1973). The described Australian species of *Sisyra* differ from *S. potamophila* as follows: The antennae in *S. punctata* have a greatly elongated scape and in the forewings the veins are pale and dotted with conspicuous brown spots. In *S. turneri* the forewings are pale brown with a pattern in various shades of brown, the pattern not made up of small spots and patches to give a speckled effect as in *S. potamophila*. The antennal flagellum is black throughout in *S. turneri*. In *S. esbenpeterseni* the crossveins in the forewings are not heavily

marked and the forewing membrane is uniformly smoky brown. In *S. brunnea* most of the major cells in the forewings have a median dark streak running along their length; these are not present in *S. potamophila*. In *S. rufistigma* the pterostigma is reddish and the antennal flagellum has about the basal two thirds dark and the distal third pale (as in *S. brunnea*). The male claspers have not been described for all Australian species but obvious differences between these organs in *Sisyrina tropica*, *Sisyrina potamophila*, *S. rufistigma* and in species from other regions suggest that they will be useful for distinguishing the Australian species. Wise (1998) has provided a description (probably of *S. rufistigma* from New Zealand), which includes an outline of the shape of the male claspers and the ninth tergite and sternite of the female.

Provisional key to Australian species of Sisyridae

- 1 Wings with outer series of gradate crossveins *Sisyrina tropica*
 - Wings without outer series of gradate crossveins 2
- 2 Scape greatly elongate, much longer than broad; wings brown; veins pale, dotted with brown spots *Sisyrina punctata*
 - Scape not greatly elongate, about as long as wide; wing patterns various 3
- 3 Forewing with distinct pattern 5
 - Forewing uniformly brown, without pattern but some crossveins may be darkly bordered 4
- 4 Crossveins darkly bordered *Sisyrina rufistigma*
 - Crossveins not darkened *Sisyrina esbenpeterseni*
- 5 Pterostigmal area pale but opaque, translucent
 - *Sisyrina potamophila* sp. n.
 - Pterostigmal area normally pigmented 6
- 6 Wing with submarginal pigmented band darker than rest of membrane, running from pterostigma, along hind margin of wing to near wing base Undescribed *Sisyrina* sp. (Lake Pedder)
 - Wing pattern without such marginal band 7
- 7 Cells in middle of wing each with median, longitudinal dark streak *Sisyrina brunnea*
 - Cells in middle of wing without median dark streak *Sisyrina turneri*

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